

1     CLAIMS:

2     What is claimed is:

3             1.     A bone joining implant, comprising;  
4                     a tubular body having an open leading end and a central aperture,  
5             the central aperture similarly sized to the open leading end;  
6                     the open leading end communicating with the central aperture and  
7             configured to entrap a bone projection from each of a pair of adjacent  
8             bone bodies being joined together.

9             ...  
10            2.     The implant of claim 1 wherein the tubular body has an  
11            oblique outer surface, a cylindrical inner surface, a cylindrical leading  
12            edge, and a tapered leading end portion, the tapered leading end portion  
13            extending from the cylindrical leading edge to the oblique outer surface.

14            ...  
15            3.     The implant of claim 1 further comprising a plurality of  
16            retaining tabs provided on an outer surface of the tubular body and  
17            configured to retain the implant between the pair of adjacent bone  
18            bodies.

19            ...  
20            4.     The implant of claim 1 further comprising a plurality of  
21            fenestrations provided in the tubular body, extending from the central  
22            aperture to an outer surface.

1           5.    The implant of claim 1 wherein the tubular body has an  
2 open trailing end, the open leading end, the open trailing end and the  
3 central aperture have a common, substantially uniform inner diameter  
4 configured to facilitate axial x-ray analysis of arthrodesis.

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6           6.    The implant of claim 1 wherein the tubular body has an  
7 open trailing end, the central aperture communicating with the open  
8 trailing end.

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10          7.    The implant of claim 6 further comprising a pair of tool  
11 fenestrations provided adjacent the open trailing end and configured to  
12 enable mating of the implant with a tool during insertion.

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14          8.    The implant of claim 6 wherein the tubular body includes at  
15 least one guide slot provided within the open trailing end, the guide slot  
16 operative to facilitate visual placement of the tubular body between a  
17 pair of adjacent bone bodies.

18  
19          9.    A vertebral interbody implant, comprising;  
20               a tubular body having an oblique outer surface, a cylindrical inner  
21 surface, and a tapered portion extending from a cylindrical leading end  
22 between the inner surface and the outer surface;  
23

1 the cylindrical leading end sized to be received within bone beds  
2 of adjacent vertebrae being joined, and the tapered portion operative to  
3 self-distract the vertebrae during insertion of the oblique outer surface  
4 therebetween.

5  
6 10. The implant of claim 9 wherein an open leading end is  
7 formed within the cylindrical leading end.

8  
9 11. The implant of claim 9 wherein the body includes an open  
10 leading end and an open trailing end, a cylindrical aperture further being  
11 provided therebetween.

12  
13 12. The implant of claim 9 further comprising a plurality of  
14 fenestrations provided in the body, extending from the hollow portion to  
15 the oblique outer surface.

16  
17 13. The implant of claim 9 further comprising at least one tab  
18 carried by the oblique outer surface and configured for forcible  
19 engagement with a bone bed of an adjacent vertebra, the tab operative  
20 to retain the tubular body in securement with the bone bed.

21  
22 14. The implant of claim 9 further comprising at least one guide  
23 slot provided along a trailing end.

1           15. The implant of claim 9 wherein the implant comprises a  
2     vertebral interbody fusing device.

3  
4           16. The implant of claim 9 further comprising a hollow portion  
5     provided in the body, the hollow portion configured to receive bone graft  
6     material therein, and a plurality of fenestrations provided in the body,  
7     extending from the inner surface to the outer surface.

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9           17. The implant of claim 9 further comprising a hollow portion  
10    provided in the tubular body, the hollow portion configured to receive  
11    bone graft material therein, and a plurality of fenestrations provided in  
12    the body, extending from the hollow portion to the outer surface, the  
13    fenestrations configured to promote physiological implant fixation.

14  
15          18. A vertebral interbody implant, comprising:  
16          a tubular body having an open leading end, an open trailing end,  
17          and a central aperture, the central aperture sized similarly to the open  
18          leading end and the open trailing end;

19          the open leading end and the central aperture configured to entrap  
20          an integrally formed bone projection from each of a pair of adjacent  
21          bone bodies being joined together, the open leading end, open trailing  
22          end, and central aperture further cooperating to facilitate axial x-ray  
23          analysis of arthrodesis following implantation.

1           19. The implant of claim 18 wherein the tubular body has an  
2 oblique outer surface.

3  
4           20. The implant of claim 19 wherein the tubular body has a  
5 cylindrical inner surface.

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7           21. The implant of claim 20 wherein the tubular body has a  
8 tapered portion extending from the cylindrical leading end between the  
9 inner surface and the outer surface.

10  
11           22. A method for joining together vertebral bodies, comprising:  
12 providing a tubular intervertebral implant having an open leading  
13 end communicating with a central aperture;

14 preparing a receiving bed in each of a pair of adjacent vertebral  
15 bodies separated by an intervertebral disk, the vertebral bodies  
16 cooperating to form a cylindrical kerf, the kerf forming a bone projection  
17 from each vertebral body;

18 instantly fixing the vertebral bodies together by receiving the  
19 tubular implant within the kerf such that adjacent bone projections of  
20 associated vertebral bodies are received within the open leading end and  
21 into the central aperture.

1           23. The method of claim 22 wherein over time, the instantly  
2 fixed vertebral bodies fuse together via arthrodesis.

3  
4           24. The method according to claim 22 wherein the tubular body  
5 has an oblique outer surface, the oblique outer surface operative to  
6 impart distraction when receiving the tubular implant within the  
7 cylindrical kerf.

8  
9           25. The method of claim 22 wherein the tubular body includes  
10 a plurality of tabs carried on an outer surface, each tab operable to  
11 engage with one of the receiving beds such that the implant is  
12 immovably received within the cylindrical kerf.

13  
14           26. The method according to claim 22 wherein the tubular  
15 intervertebral implant has an open leading end, an open trailing end, and  
16 a central aperture, the open trailing end, the open leading end and the  
17 central aperture having a substantially uniform inner diameter operative  
18 to facilitate axial x-ray analysis of arthrodesis, wherein the implant is  
19 received within the kerf so as to facilitate x-ray analysis of arthrodesis.

20  
21           27. The method of claim 26 wherein the tubular implant is  
22 positioned in a generally anterior/posterior direction.

1           28. The method of claim 22 wherein each bone projection  
2 comprises intact bone formed integrally from one of the vertebral bodies  
3 and configured to enhance osteogenesis.  
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